



Research Article

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## Teacher Persistence/Resilience in Relation to Professional Development: A Systematic Literature Review

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### Abstract

*In the education sector, teachers' persistence and resilience has been a topic of considerable debate, prompting us to question how professional development of teachers can enhance persistence and resilience among teachers. Current study highlights the importance of teacher's behaviour and their vital role in education system. To date, no systematic review has provided the answer to this question. Thus, this systematic review has presented a synthesis of six studies that have related teachers' persistence and resilience to the professional development of teachers. The studies, two of which were qualitative, three quantitative, and one mixed method, detail evidence of teachers' professional development leading to teachers' persistence and resilience. For data collection surveys and semi-structured interviews has been conducted for collecting general data. The review results highlighted that professional development programs for teachers can enhance persistence and resilience among teachers, but these programs should be developed by focusing on carefully-chosen teacher and relevant institutional factors. Every teacher's professional development has an impact on their capabilities to determine their role in education. There is a significant relation between teacher's professional development and resilience. It is important to promote providing more nearer look to see how teachers feel and think and create more approaches to educate them.*

**Keywords:** Teacher Persistence; Teacher Resilience, Professional Development, Teaching, Systematic Review

### 1. Introduction

Globalization and rapid technological change have changed the business world in multiple ways (Cheng and Chen, 2017), with organizations also facing several challenges that are affecting

employees and their performance, due to their resistance to such changes (Huang, 2015; Holzer et al., 2019). However, employee persistence can help in their professional development, overall organizational performance and innovation, as Chowhan et al., (2017) highlighted, given that employees can know the importance of innovation in an organization when they demonstrate they have persistence in overcoming the obstacles to innovation. Many Organizations can face different challenges in their operational process, such as resource shortages (Morrison, 2015), employee turnover (Argote, 1996), and lack of employee engagement (Al- Dalahmeh et al., 2018); most of which can be overcome by the persistence of employees that is defined by Rovai (2003) as a continuous intention to accomplish an assigned task or fulfill the goal despite of facing obstacles. Howard and Crayne (2019) explained that employees' persistence could enable them to accomplish long-term goals, and is important in every organization, particularly in educational institutions (Wheatley, 2022; Reason, 2009; Kim and Corcoran, 2018) where teachers' work encompasses developing comprehensive strategic course plans, study schemes, research agendas, and career counseling.

Wheatley (2002) explained that teacher persistence is essential for the development of teaching skills, and it may promote teacher efficacy. Persistence is linked with core teaching skills, related dispositions for success in teaching (Saatscioglu, 2020), and intrinsic motivations (Higashi et al., 2017). This persistence can result in an increase in students' learning abilities (Asmus, 2021) as persistent teachers will continuously help their students and strive for optimal performance in teaching. Moreover, persistent teachers can enhance their professional development, as such teachers are self-motivated, a characteristic which differentiates them from others, and can help the reviewers of program development to tailor strategies for them. Furthermore, this professional development improves teaching (Kennedy, 2016).

Every educational institution faces challenges from the internal or external environment, with teachers, comprising the cornerstone of these institutions, being the first victims of challenges. Some teachers may leave their job when faced with such challenges, but some are persistent with teaching. In the teaching profession, persistence is only found in effective teachers (Goldhaber et al., 2011), and this is recognized as something that helps institutions to grow. Besides persistence, teachers' resilience can also enhance institutional performance, as it increases the retention rate (Tait, 2008) by enabling teachers to respond positively to different challenging circumstances in their careers within the organization (Gu and Day, 2007).

In many countries, teachers' retention in the early stage of the profession is becoming a critical issue, and to resolve this issue, educational institutions are developing different useful strategies. These institutions and many researchers are focusing on newer areas of investigation (i.e., teacher resilience). This provides a better knowledge of what enables teachers to show persistence when encountering challenges (Beltman et al., 2011). Pearce and Morrison (2011, p. 48) defined teacher resilience as "the process of, capacity for, or outcome of successful adaptation despite challenging or threatening circumstances." Practitioners are interested in finding teacher persistence and resilience outcomes, as these individuals and self-motivated behaviours are important in professional development. Thus, to examine teacher persistence in the educational sector, this systematic literature review synthesizes the current evidence on teacher persistence, teacher resilience, and professional development of teachers. Moreover, it provides an evidence-based overview of prior studies on teacher persistence.

The systematic literature review research is structured as follows. The background section defines teacher persistence, provides an overview of professional development, justifies the need of teacher persistence, and links teacher persistence to professional development. The methodology section comprehensively describes the procedure for conducting this systematic literature review, including data collection procedures and guidelines, research steps, approach for review, and article selection for analysis. The findings provide an overall data view. The discussion section provides an evidence summary and comprehensive explanation of results. The implications section outlines how the research implications can help researchers and practitioners. The last section highlights the limitations and provides recommendations.

## 2. Background

In educational institutions, student persistence can be predicted by their prior knowledge, and interest in the subject, but teachers' persistence is influenced by their intrinsic interest (Higashi et al., 2017). Many studies have defined teachers' persistence as the disposition manifested in daily teaching actions, but its actual conceptualization is the continuous intention of teachers to work hard at teaching. Working hard in other contexts instead of teaching does not fall under the umbrella of teacher persistence. Thus, Wheatly (2002, p. 3) defined teachers' persistence as "a tendency to persist steadfastly, until successful, in the many specific courses of action that constitute teaching". Furthermore, teacher persistence is broadly defined by Wong and Luft (2015, p. 622) as "teacher's commitment to, and continuation in, classroom teaching despite experienced challenges or difficulties at the institute".

Teacher persistence is not only linked with a teacher's own success (Wheatley, 2002), but it can ultimately lead to the success of the educational institution. Habermen (1995) was the first to analyze teachers' persistence in schools, and he highlighted the importance of different factors in effective teaching, such as the development of teaching skills, response to setbacks, expectations of teachers towards students, use of reform-oriented teaching practices, and especially, responsiveness to student diversity. Teacher persistence can, in turn, influence student persistence. The corresponding improvement in student behaviour and performance through persistence can increase the teachers' expectations (Teel, DeBruin-Parecki, and Covington, 1998). Persistence is important for all students, particularly for those students for whom others may have lower expectations (Goldberg, 2000).

Many studies have highlighted antecedents of teacher persistence, such as Higashi et al., (2017) who found that this persistence is linked to the teacher's intrinsic interest, self-identity as a subject expert, and performance approach goals. Saatscioglu (2020) indicated that teacher persistence can be enhanced by a tendency to cooperate and communicate. Thus, teachers who are skilled, cooperative, and agile teachers in managing turbulent situations can show persistence because they can manage their goals, as well as develop and sustain relationships and support networks. The studies have extensively explained the factors affecting teacher persistence, and although there is abundant literature on outcomes of teacher persistence, but there is a paucity of research showing the role of teachers' persistence and resilience in their professional development, which remains a topic of considerable debate among researchers (Riel et al., 2016).

The notion of teacher resilience has been studied by using different methodological approaches, including qualitative, quantitative, and case study, but is still considered a relatively new area of investigation, due to a lack of research examining its outcomes. Moreover, comprehensive literature reviews on teacher resilience are missing, with a possible reason for this being its multidimensional and ambiguous nature (Beltman et al., 2011). Any strategy for developing teacher resilience should also focus on improving the professional environment that can enhance teachers' personal resources (Ainsworth and Oldfield, 2019) for professional development.

Professional development of teachers can improve teaching methods, standards, and approaches (Desimone et al., 2002; Dede, 2006; Kennedy, 2016) as it supports teachers in overcoming problems they face, when linked with curriculum support experts (Riel et al., 2016). Moreover, professional development enables teachers to learn about student perspectives (Evans et al., 2020). Additionally, professional development can overcome persistent challenges teachers face (Kennedy, 2016). Wong and Luft (2015) described teacher persistence as teachers' belief about learning, particularly classroom teaching. Limited literature highlighting teachers' intention to become members of the teaching profession and then show persistence has made it a critical topic for investigation. Moreover, Chester (2018) explained that more research on employee persistence is needed. Furthermore, the existing literature reviews on professional development for teachers either focus on the benefits of blended learning approaches for pre-service teachers or emphasize identifying skills essential for teaching.

Existing literature reviews of OPD (Online Professional Development) for teachers, which is

defined as “structured, formal professional learning that is provided entirely online, resulting in changes to teacher knowledge, behaviour and practices” (Bragg et al. 2021, p. 2), have synthesized varying topics, including the benefits of a blended learning approach for pre-service teachers (Atmacasoy & Aksu, 2018), in addition to the types of knowledge and skills required to teach online (Moore-Adams, Jones, & Cohen, 2016). Thus, this systemic review has sought to fill this gap by conducting a review of studies that focused on teacher persistence and professional development. This review has proposed the following research questions:

- What are the characteristics of the research/studies included in this systematic review?
- What are the reported outcomes of teachers' persistence?
- What elements are used by studies for professional development?

### 3. Review of Literature

Teachers' productivity is important based on institutional efforts toward teacher persistence, yet many educational institutions continue to retain poor teachers, perhaps in an effort to reduce costs (Hanushek and Rivkin, 2012). Effective strategies for enhancing teaching quality should include teacher persistence based on the motivational persona (Lautzenheiser, 1990). Rissanen et al., (2019) argued that persistent teachers firmly believe in their power to influence students to study and develop moral character. According to Wang et al., (2015), attribution theory is most appropriate for explaining teacher persistence. This theory contends that failure attributions to personally controllable factors should predict persistence in teachers. Tschannen-Moran and Johnson (2011) mentioned that teachers who start their teaching career with strong self-efficacy views develop persistence. In contrast, teachers who start with low self-efficacy are more likely to rely on activities that support their beliefs. Previously, many studies focused on teacher persistence, but currently, there is limited literature which addresses persistence directly related to the issue of personal job-fit (Player et al., 2017) and professional development. Teacher persistence is becoming an important area of research nowadays because there is a paucity of research highlighting why teachers entered the teaching profession. Moreover, there is a need to investigate why teachers persist in teaching (Wong and Luft, 2015).

Over the last three decades, researchers have discussed different antecedents and outcomes of teacher persistence. Neito (2003) conducted qualitative research based on interviews of eight persisting school teachers and explored their persistence in the teaching profession due to personal, emotional, and relation factors. She found that some teachers persist because they love their students, whereas other studies claimed self-efficacy (Tschannen-Moran and Johnson, 2011), personal beliefs (Wong and Luft, 2015), intrinsic motivations (Higashi et al., 2017), and teaching skills (Saatscioglu, 2020) as antecedents of teacher persistence. Wong and Luft (2015) indicated that teachers' personal beliefs are insufficient to determine teacher persistence in the profession, even though such beliefs are an important factor in impacting teacher persistence. Therefore, it is essential to explore persistence in the teaching profession (Warnick et al., 2010).

Teacher resilience can play an important role in teacher education, particularly teaching around the globe. Teaching is a challenging profession; thus, teachers' resilience is important in all educational milieus. Moreover, teacher resilience has several positive outcomes, as it is a changeable trait instead of innate behaviour (Wang, 2021), but Wosnitza et al., (2018) highlighted that personal resilience is linked to self-reflection. Moreover, they explained that when it comes to teacher resilience, self-reflection, being an important instrument, can be used by teachers to identify risky and protective factors related to their professional resilience.

Mansfield et al., (2012) considered that literature on resilience has either explained the complex nature of teachers' jobs or focused on specific categories of teachers, and stated that comprehensive research on teacher resilience is in its infancy stage. Further, they developed a four-dimensional framework of teacher resilience; which includes profession (committed to students, is organized,

prepared and manages time, has effective teaching skills), emotion (tends not to take things personally, has a sense of humor, manages emotions, enjoys teaching), motivation (likes challenge, maintains motivation and enthusiasm, sets realistic expectations and goals), and social (builds support and relationship, has strong interpersonal and communication skills). Further, Yonezawa et al., (2011) highlighted that improvement of teacher retention and, particularly, teacher resiliency, are important educational problems.

#### 4. Methodology

Every qualitative research study is based on a distinct or specific concept (Duffy and Chenail, 2009), and that concept shows the approach to be used. The current study aimed to explore the literature review on teacher persistence, resilience, and professional development; thus, it focused on a systematic literature review approach. According to Campbell (2014), the subjectivist/interpretivist paradigm can be followed while conducting a systematic literature review. Where this systematic review differs to traditional qualitative studies is that it focuses on concepts and evidence found in the literature, a method which minimises the risk of bias as a result of human error (Petticrew and Roberts, 2008; Cook et al., 1997). By contrast, a focus on interviews and theoretical investigation is the hallmark of a more traditional qualitative study. A systematic literature review aims to obtain a comprehensive view of studies and their findings, being defined by Vuori & Vaisanen, (2009, p.3) as being "the valuable strategy, when the aim is to identify, evaluate, and synthesize all of the important research on a certain topic to acquire a complete picture of the studies and their findings".

With this definition in mind, this systematic review focused on teacher persistence, resilience, and professional development. Before the establishment of the review, research protocols were developed. First, we limited the scope to teachers of general educational institutions instead of K-12 or boarding schools. Secondly, due to the high volume of search results, we experimented with the specific time horizon of the publication date and settled on the previous ten years (i.e., from 2013 to 2023). Thirdly, we set the inclusion and exclusion criteria to minimize irrelevant information. Fourthly, the process/method of conducting the review was finalized.

##### 4.1 Inclusion/Exclusion Criteria

To develop a suitable search strategy, we consulted an expert librarian in education and teachers' behavior; and with his guidance, we developed a plan to include and exclude data for review. According to the plan, we aimed to maximize the chances of including research evidence from the most reliable and authentic sources. Articles based on quantitative, qualitative or mix-approach studies, published between 2013 to 2023 in the English language, were shortlisted for review. Conceptual articles, descriptive articles, review papers, editorials, special issue proposals, grounded theory articles, literature reviews, and system reviews were excluded. Moreover, articles on other behavioral factors of teachers, such as retention, psychological contract, commitment, networking, knowledge sharing, polychronic, leadership, technology adoption, and self-determination, were also considered. Furthermore, the research on resilience, persistence, and professional development focusing on employees of manufacturing or other organizations was excluded. Although these excluded studies are worthy in themselves, they were not relevant to the scope of the teaching sector. Therefore, articles that focused on teacher resilience, teacher persistence, and teacher professional development were included, as this systemic review intends to examine the professional development of teachers linked to resilience and persistence. This systematic review focused on gaining a deeper understanding of teacher resilience, persistence, and professional development.

#### 4.2 Search Strategy

To search relevant articles, a list of databases was prepared, and then they were systematically searched for peer-reviewed literature. These databases include Google Scholar, EBSCO, Scopus, Master Journal List (MJL), HJRS, and ProQuest. Secondly, after searching the articles from different databases, an additional search was conducted to find relevant articles published by reputed publishers such as Elsevier, Taylor and Francis, Emerald, Text Road, Wiley, Springer, Hindawi, Sage, MDPI, IGI Global, Scientific Research Publishing, etc. The search process was completed in July 2023. The search string consisted of some or all the following terms, which were modified according to the requirements of different databases: Teacher Resilience, Teacher Persistence, Teacher Professional Development, Teacher Resilience and Teacher Professional Development, Teacher Persistence and Teacher Professional Development, Professional Development in Teaching. The search organizing websites such as Research Rabbit and AI tool were not used for the search. To sort more relevant literature, grey literature was also searched (i.e., official reports of institutes, reports of national education counsels, and professional development websites); further, similar existing systematic reviews were studied, and the list was prepared on the studies they focused on. The whole search process returned a high volume of articles that could not be processed within our exclusion criteria and limitations; thus, we adjusted our inclusion criteria as explained in section 1.3.

#### 4.3 Data Management

The data gathered from extensive databases, publishers, and manual searches was organized, with the results computed from the database search being exported into the Endnote (i.e., software to manage references), and grey literature searchers' data were added manually. All the duplicate articles were removed, to retain continuity. The list of articles to be considered for the review was also developed in MS Excel. The selection of studies is explained in the next subsection.

#### 4.4 Study Selection

During the first step of the study selection process, screening took place. Titles and abstracts were reviewed in this screening, to ensure their relevance. For the second step, titles and abstracts of all articles were screened on the eligibility criteria (i.e., inclusion and exclusion criteria). The total record identified 3,084 articles (2,896 from database searching and 188 from other sources), and 768 duplicates were removed. From the remaining 2,316 remaining relevant articles, 2,198 records were excluded. A further 118 full-text articles were assessed for eligibility, but 112 were again excluded, and six papers were ultimately accepted for inclusion in this review. There were different reasons for exclusion, such as conference proceedings, program design reports by government bodies, wrongly targeted populations, insufficient information, and focusing on other categories of employees instead of teachers.

#### 4.5 Process/Method

The review process followed two approaches, Systematic Quantitative Assessment Technique (SQAT) and Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). Guidelines of Pickering and Bryne (2014) were used for SQAT, and Moher et al., (2009) for PRISMA. SQAT enables scholars to evaluate the existing literature and write an organized summary of a research area (topic). Additionally, the SQAT method investigates the time distribution, geographical area, data collection methods, and types of articles of the research topic/area (Zhu et al., 2018). It provides a well-organized and detailed review and highlights the most important topics and variables for further investigation. The process of PRISMA is shown in Figure 1, and SQAT in Figure 2.

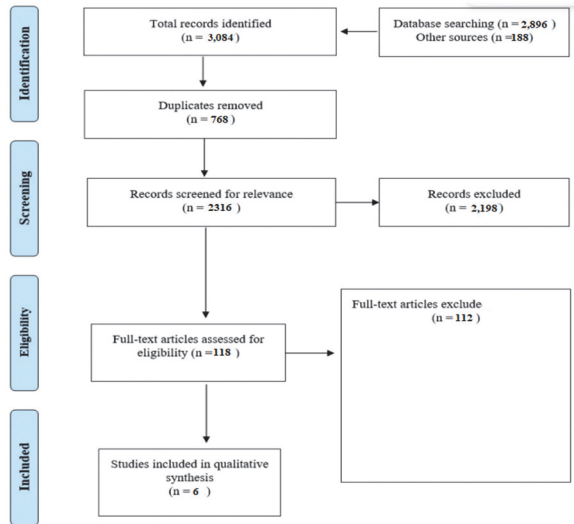


Figure 1: PRISMA flow diagram

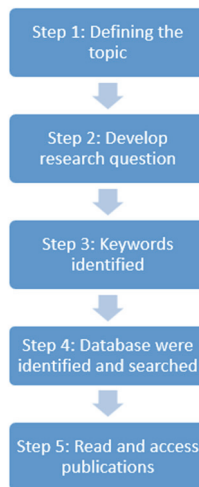


Figure 2: SQAT Process

#### 4.6 Data Extraction and Analysis

The data extraction was manual, and no research software or website was used. Before analysis, the collected data were organized and classified. In this organization, the list of articles and their details were mentioned. The details included the author's name, title, methodology, sample, area, and key findings. In general, the systematic review utilizes two different tools, including Effective Public Health Practice Project (2009) (EPHPP) and Critical Appraisal Skills Programme (2018) (CASP). EPHPP to access quantitative studies and CASP for qualitative research. CASP tool is concerned with research methodology, design, recruitment strategy, data collection process, relationships between

researcher and participants, ethical considerations, data analysis, findings, and the value of the research. Moreover, the studies focusing on mixed methods can be analyzed using both tools. This systematic review has adapted these tools according to its own needs and requirements.

## 5. Results

Two of six studies considered for the review focused on different aspects, with Danijele (2018), for example, investigating the influence of professional identity and personality traits on the professional development of teachers, but for this review, the context of personality traits was what was considered. Similarly, Wong and Luft (2015) aimed to examine two aspects, namely, the reasons/factors behind teacher persistence in class and how teachers with student-centered beliefs show persistence, but this systematic review has only considered the part of their study focusing on identifying the reasons/factors behind teacher persistence. The other studies focused on the persistence of teachers (Gershenson, 2016), components affecting professional development activity for teachers (Bayar, 2014), teacher resilience (Papatraianou and Le Cornu, 2014), and outcomes of teacher resilience (Polat and Iskender, 2018).

### 5.1 Study characteristics

The study characteristics included the publication year of the articles, origin of the research (i.e., country), research aim, target group, study design, sample, method of data collection, and final outcomes. These characteristics are shown in Table 1 (See Appendix I).

#### 5.1.1 Year published and country of origin

The studies encompass a broad geographical area, with one study originating in Australia, one in Slovenia, two in Turkey and two in the US. Two studies were published in 2014 and 2018, one in 2015 and one in 2016.

#### 5.1.2 Target group

All six studies focused on teachers, but their based on their objectives, they targeted different teachers, such as one research report on secondary school teachers and another on unique teachers. Moreover, the studies reported on elementary school teachers, teachers from general upper secondary education schools, early career teachers, and teachers working at different school levels.

#### 5.1.3 Aim of study

The research aimed to examine how professional development of teachers (3/6) supports teachers' resilience (2/6), and teacher persistence (2/6). Moreover, it included an examination of factors affecting teacher persistence (1/6), teacher resilience (2/6), and professional development of teachers (1/6).

#### 5.1.4 Study design and sample

Among the six studies considered for review, three were quantitative, and two were qualitative. One study adopted the mixed method. The number of participants (i.e., teachers) ranged from 16 to 581, but one study focused on 13,391 observations of unique teachers. In qualitative and mixed-method research, the sample size was less (i.e., 16 to 100), but it was more in quantitative studies.



### 5.1.5 Data collection

The most common form of data collection from different teachers was surveys, as out of six, three studies were quantitative (Polat and Iskender, 2018; Danijele, 2018), followed by semi-structured interviews (Wong and Luft, 2015; Papatraianou and Le Cornu, 2014), and general interviews (Bayar, 2014). One study gathered data by observation (Gershenson, 2016).

### 5.1.6 Outcomes

All the reported outcomes pertained to teachers and their behavioral factors, such as resilience and persistence. Moreover, the outcomes revealed the factors leading to the professional development of teachers (PDT) by linking PDT with behavioral or personality factors. Personality traits play an important role in the professional development of teachers (Danijele, 2018) that can lead to teacher persistence (Gershenson, 2016) and resilience (Papatraianou and Le Cornu, 2014). The outcomes of the majority of the studies reported (i.e., being recorded in 3/6) professional development as constituting an important element for teachers. Two studies merely reported teacher persistence (Wong and Luft, 2015) and teacher resilience (Polat and Iskender, 2018), but they didn't highlight professional development. The detail of the outcomes is given in Table 2.

**Table 2:** Outcome details

Outcomes	No. of Studies	1 <sup>st</sup> Author
Professional development of teachers a significant factor	3	Gershenson; Bayar; Papatraianou
Teacher persistence as a behavioral factor	1	Wong
Teacher persistence is a motivational factor based on belief and emotions	2	Wong; Gershenson
Professional development depends upon personality traits, and it motivates teachers to involve them	3	Wong; Gershenson; Bayar;
Teacher resilience depends upon their information relationships	1	Papatraianou
Teacher resilience level is not the same	1	Polat

### 5.2 Study Quality Appraisal

The quality appraisal for this systematic review comprised two (2/6) qualitative studies, three (3/6) quantitative studies, and one (1/6) mixed method study. EPHPP (2009) tool was used for scoring three quantitative studies, and two qualitative studies were cored by using CASP (2018) tool. Whereas, for one mixed method study, both tools were used for scoring (See table 3).

#### 5.2.1 Quantitative Studies

The quantitative studies were scored with the EPHPP tool, and the results highlighted two studies with strong scores (Danijele, 2018; Polat and Iskender, 2018) and one with moderate scores (Gershenson, 2016). These scores were computed based on EPHPP (i.e., "Strong= No Weak Ratings", "Moderate= On weak Rating," "Weak= Two or more weak ratings". There was no weak scoring quantitative study, as all studies were focused, and none of them remained consistent to either focus groups or allocated participation of different teacher categories at once.

### 5.2.2 Mixed Method and Qualitative Studies

The qualitative studies were scored with the CASP tool, and the results highlighted one study with a strong score (Papatraianou and Le Cornu, 2014) and one with a moderate score (Bayar, 2014). Whereas, for mixed method research (1/6), both EPHPP and CASP tools were used, and results revealed strong for the quantitative part and moderate for the qualitative (Wong and Luft, 2015).

**Table 3:** Scoring based on EPHPP & CASP

1 <sup>st</sup> Author	Year	Quantitative	Qualitative	Mixed Methods	Total score EPHPP	Total score CASP
Wong	2015			X	Strong	Moderate
Gershenson	2016	X			Moderate	
Bayar	2014		X			Moderate
Danijela	2018	X			Strong	
Papatraianou	2014		X			Strong
Polat	2018	X			Strong	

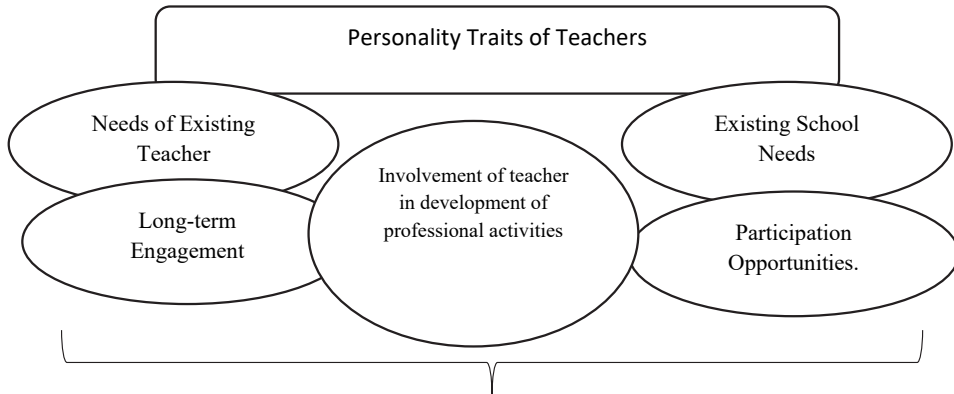
## 6. Discussion

This review has systematically highlighted the importance of teachers' professional development as a significant factor influencing teacher resilience and persistence. The summary of evidence gathered from articles under consideration, implications, and limitations, along with recommendations, is given in the following section:

### 6.1 Summary of evidence

The results of this systematic review demonstrated teacher professional development as an important factor leading to persistence and resilience. Educational institutions should conduct effective professional development programs for teachers, and these programs should match the needs of existing teachers, existing school needs, long-term engagement, involvement of teachers in the development of professional development activities, and participation opportunities (Bayar, 2014). Moreover, the personality traits of teachers should also be kept in mind while developing professional development programs (Danijele, 2018), as these programs not only influence teacher persistence (Wong and Luft, 2015) but also develop resilience that is positively related to the organizational commitment and job satisfaction (Polat and Iskender, 2018). All studies summarized that the professional development of teachers should be carefully monitored, evaluated, programmed, and designed, as only an effective development program will develop persistence and resilience. Some suggestions for the development of such a program provided by two studies (Bayar, 2014; Danijele, 2018) are presented in Figure 3.

## 6.2 Teacher Persistence and Teacher Resilience



**Figure 3:** Elements for developing professional development program for teachers

Figure 3 shows that to enhance teacher persistence and resilience, the professional development program for teachers should focus on their personality traits, needs of teachers, needs of school/institution, long-term engagement of teachers, involvement of teachers in developing professional activities, and participation opportunities. Moreover, this review has revealed that besides professional development programs for teachers, teacher beliefs also impact teacher persistence, and these beliefs can also determine whether a teacher persists in the teaching profession.

## 7. Conclusion

A teacher has a central position in educational systems; thus, many quantitative, qualitative, and mixed method studies have focused on different behavioral factors of teachers related to educational institutions. However, this systematic review of the literature is the first to highlight that teacher professional development leads teacher persistence and teacher resilience. The study has identified much literature that had not been examined, to develop an understanding of the most relevant professional development program for teachers to develop resilience and persistence. The findings suggested that teacher professional development programs should be based on carefully-chosen teachers and institutional relevant factors, and this effective program can develop resistance and persistence among teachers. This systematic review has highlighted professional development for teachers as a stimulus for enhancing teacher persistence and resilience in educational institutions. Moreover, it has identified the antecedents and outcomes of professional development for teachers, teacher persistence, and teacher resilience by focusing on six studies (i.e., two qualitative, three quantitative, and one mixed method).

## 8. Implications

In the education system, a teacher has a key position, and he or she is considered as a driver of change, and because of this fact, the teaching profession is still the main focus of many studies. Most of the previous studies focused on identifying the factors that affect teachers' performance, and listed the elements required to enhance the performance in the existing education system. Teachers raise a generation; thus, it is necessary to examine their attitude when they encounter challenges (Polat and Iskender, 2018) or face difficulties. Therefore, this systematic literature review has focused on

identifying teacher resilience and persistence, based on professional development programs designed for teachers. In terms of theoretical implications, this review has explained the role of professional development programs designed for teachers, that focus on teacher persistence and resilience. Moreover, it has expanded the literature on teacher persistence, teacher resilience, and teacher professional development programs. For every educational institution, the professional development of teachers is crucial, as it motivates them and enables them to be persistent. Thus, this review has directed attention towards the need to develop effective teacher professional development programs. This review is significantly different to prior systematic reviews, which either focused on online professional development programs for teachers (Bragg et al., 2021) or merely emphasized teacher resilience (Beltman et al., 2011; Kangas-Dick and O'Shaughnessy, 2020; Kovacs et al., 2022). This study's methodological contributions are based on this study's unique approach. Instead of analyzing the data from respondents, this study has gathered data from previously published research articles in a clearly-defined timeframe. It has adopted the PRISMA and SQAT approach to do a systematic literature review, thus it has provided several details about previous studies. This review is a guideline for teachers' professional program designers. It extends its impact to decision-makers when highlighting effective program development programs for their teachers to make them persistent and enhance their resilience.

## 9. Limitations

The systematic review has provided a number of suggestions for researchers and practitioners to consider but still has several limitations that future researchers can consider. First, this research is based on a systematic literature review using SQAT and PRISMA, but future studies can conduct such a review using any other approaches or descriptive content analysis. Secondly, the study is qualitative, and researchers can conduct empirical research by proposing different variables. Third, the review has identified only six studies, but further systematic literature reviews can consider more recent articles.

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### Appendix I: Table 1: Study Characteristics

1 <sup>st</sup> Author	Year	(Country/ State)	Target Group	Aim of the study	Study Design	Sample	Data Collection	Outcomes	Quality Appraisal
Wong	2015	USA	Secondary science teacher	To highlight that why teachers, persist in teaching	Mixed Method	N= 35	Semi-structured interviews	"Teacher beliefs alone may not determine whether a teacher persists in the profession, but teacher beliefs are a factor among many that impact teacher persistence".	EPHPP Strong CASP Moderate
Gershenson	2016	North Carolina	446,244 student-year observations, 27,943 unique classrooms, and 13,391 unique teachers	To identify how the persistence of grade 4 teachers' effects on student absences	Quantitative	N=13,391	Observations	"Professional development training motivates and enhance the ability of teachers to influence students' socioemotional behaviours. Moreover, it can lead to persistence of teachers affecting student attendance".	EPHPP Moderate
Bayar	2014	Turkey	Elementary school teachers	To identify the important components affecting professional development activity for teachers	Qualitative	N= 16	Interviews	"An effective professional development program for teachers should match needs of existing teacher, existing school needs, long-term engagement, involvement of teacher in development of professional development activities, and participation opportunities".	CASP Moderate

1 <sup>st</sup> Author	Year	(Country/ State)	Target Group	Aim of the study	Study Design	Sample	Data Collection	Outcomes	Quality Appraisal
Danijela	2018	Slovenia	Teachers from general upper secondary education schools	To highlight the role of teachers' personality traits on their professional development	Quantitative	N= 345	Survey	Personality traits of teachers play an important role in their professional development	EPHPP <i>Moderate</i>
Papatraianou	2014	South Australia and Western Australia	Early career teachers	To reveal the influence of professional development on teacher resilience. Moreover, to highlight that how early career teachers' informal relationships play an influential role in their resilience	Qualitative	N= 100	semi-structured interviews	"Early career teachers' informal relationships play an influential role in their resilience. Moreover, resilience can be influenced by professional development of teachers"	CASP <i>Strong</i>
Polat	2018	Turkey	Teachers working at different school levels	To identify relationship between teacher resilience level and organizational commitment, job satisfaction and organizational climate. Moreover, to highlight the level of resilience of teachers working at different levels of schools	Quantitative	N= 581	Survey	"Resilience level of the teachers working at high schools differ significantly from the ones working at secondary schools. There is significant positive relationships between teachers' resilience levels and organizational commitment, job satisfaction and perception of organizational climate"	EPHPP <i>Strong</i>